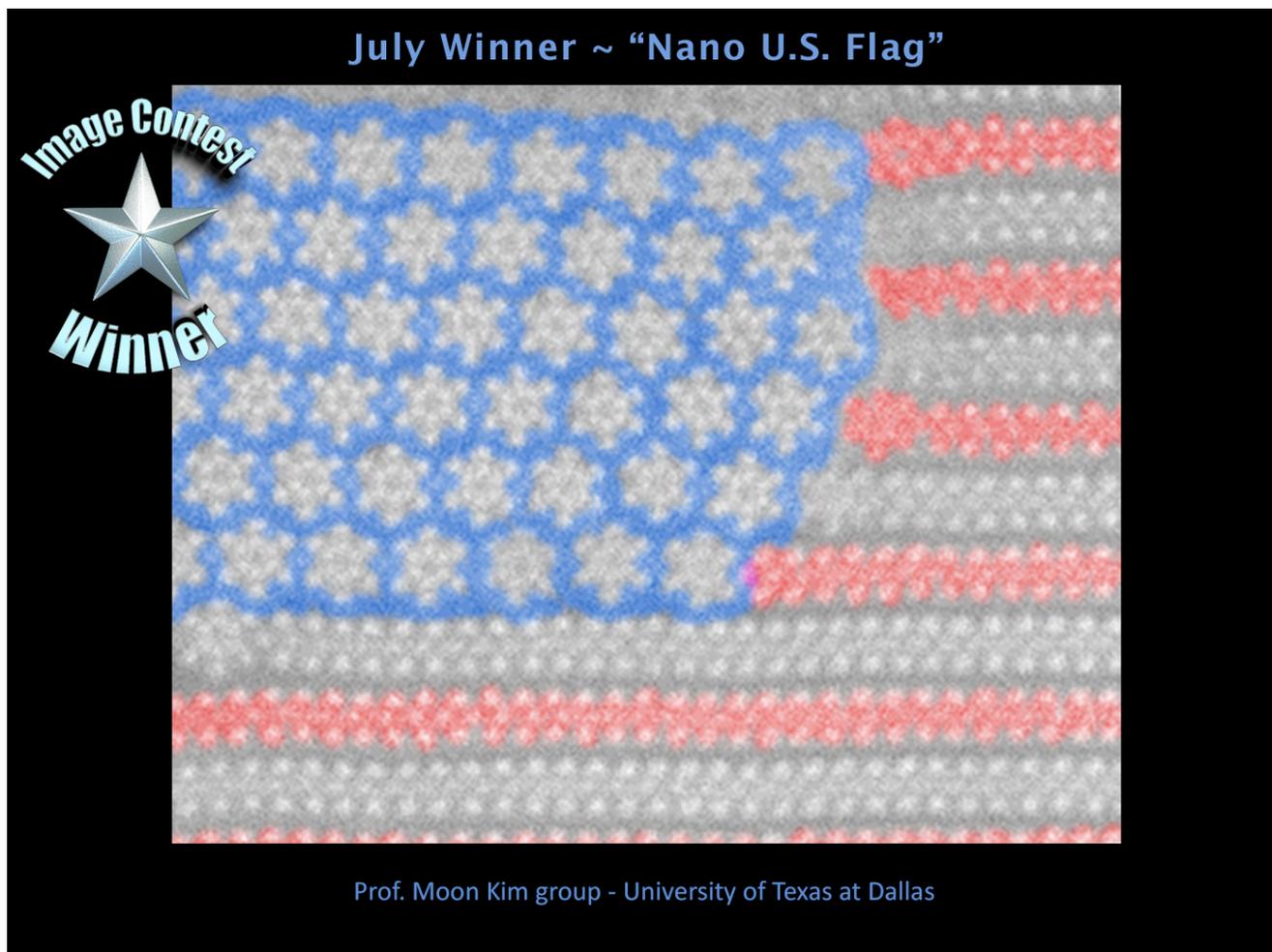


JEOL 2017 Image Contest - Winner of the Month



Congratulations to [Dr. Moon Kim's](#) group, University of Texas at Dallas for this ARM200F TEM image: "Atomic scale Mo₆Te₆ nanowires transformed from its parent MoTe₂ 2D layers. Each nanowire, 0.8 nanometers in diameter, consists of six molybdenum (Mo) atoms surrounded by six tellurium (Te) atoms." [More about this image>>>](#)

Congratulations to Patricia Zurita of Petricore for this image of a mosquito face taken on the JEOL JSM-6510 SEM.

**Do you have a great image to share?
Enter the JEOL Microscopy Image Contest!**

Visit our website for how to [enter the contest](#) and win an Amazon gift certificate and be featured in the next JEOL calendar! View all [entries](#) or learn more about criteria for a winning image.

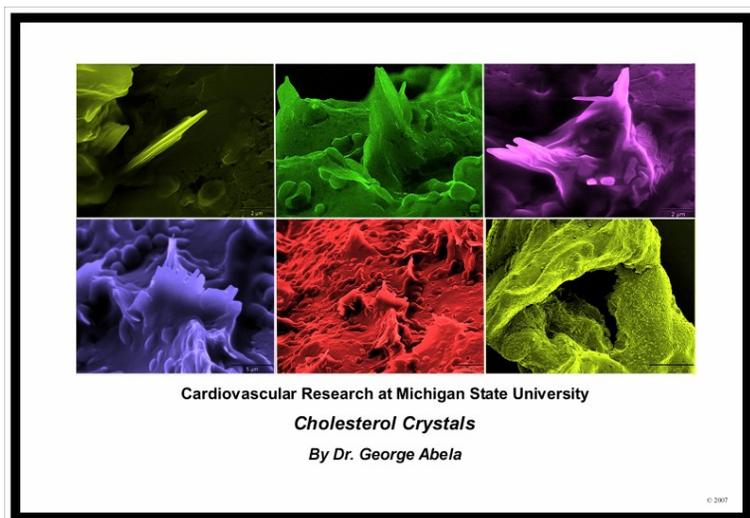
Spotlight: Dr. George Abela's Research at MSU Reveals Impact of Cholesterol Crystals on Heart Attacks

At Michigan State University's Department of Medicine, Chief Cardiologist [Dr. George Abela](#) has made life-changing discoveries in understanding the role of cholesterol crystals in heart attacks. His use of unique fixation techniques and scanning electron microscopy have aided his research, revealing that the crystals form from fat, calcium, and other substances that expand in volume when going from a liquid to a solid state.

Dr. Abela published his first SEM images of cholesterol crystals in *Clinical Cardiology* in 2005; these were obtained using the SEMs in the [Center for Advanced Microscopy](#) at MSU. Being able to see the crystals represents a breakthrough in sample processing for imaging, for traditional methods dissolved the crystal leaving behind just an imprint.

His most recent publication in the [American Journal of Cardiology](#) (July 2017) evaluates the presence of cholesterol crystals during acute myocardial infarction (AMI) and associated myocardial injury, inflammation, and arterial blood flow before and after percutaneous coronary intervention (stenting). It involved examining artery tissue that would normally be sucked out and discarded during surgery from more than 240 emergency room patients who required angioplasty and stents.

Images and full article [here>>>](#)



Data from New CryoARM Shows Unprecedented Resolution

JEOL Ltd showcased at last year's M&M, EMC and GRC its latest offering in cryoTEMs, namely the [CRYO ARM™](#). Continuing to build on 7 generations of dedicated cryo-TEMs and the highly successful ARM series, the CRYO ARM offers the latest in automation and technology for SPA. Here, we want to share some of the latest results of a 200 kV Schottky-equipped CRYO ARM installed at Osaka University courtesy of Dr. Kato and Dr. Namba. After a 3-day continuous data collection session using JADAS-controlled targeting and imaging, a set of 2500 images was acquired from a Gatan K2 camera, which after processing using MotionCor2, Gctf, Gautomatch and Relion2.0, yielded a bonafide 2.7Å map shown below. The binding pocket shows clear densities for the substrate and some of the required cations, in this case Mg²⁺. Highly suggestive of locally higher resolution, one of the more tightly bound tyrosines, Y929, shows a hole in the aromatic ring.

MALDI Imaging

The JEOL [MALDI Imaging SpiralTOF](#) is a powerful mass spec and imaging of biological and organic samples - read the new applications note for examples of MALDI imaging with the SpiralTOF.

Recent Publications and Microscopy News

[Direct Detection Electron Energy-Loss Spectroscopy: A Method to Push the Limits of Resolution and Sensitivity](#) Direct detection technology has previously been utilized, with great success, for imaging and diffraction, but potential advantages for spectroscopy remain unexplored. Here we compare the performance of a direct detection sensor operated in counting mode and an indirect detection sensor (scintillator/fiber-optic/CCD) for electron energy-loss spectroscopy.

[Dr. Mitra Tahiri](#) of Drexel University, co-author, explained that this was a grassroots effort - the authors co-developed the instrumentation with the aid of a special development grant from NSF. They are open to collaborators who wish to work with them using the instrumentation. This work was done using a JEM-2100F Transmission Electron Microscope.

[Tiny "Supraballs" Put a New Spin on Long-lasting Color](#)

Paper: Bioinspired bright noniridescent photonic melanin supraballs, Ming Xiao, et al.

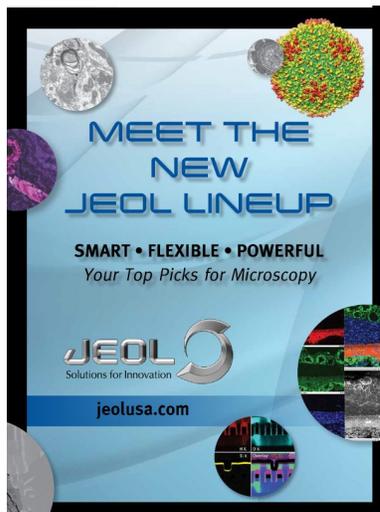
[Ancient Canadian Meteor Strike Created Hottest Rock on Earth](#)

Paper: Cubic zirconia in >2370 °C impact melt records Earth's hottest crust, Timms, Erickson, Zanetti, et al.

Meet the new JEOL Lineup



Check out our full suite of Electron Microscopes, from [benchtop SEM](#) to ultrahigh resolution [Field Emission SEM](#) -- and [120kV TEM](#) to [Atomic Resolution](#) and [CryoTEM](#).



We've just changed the rules of the game with the introduction of the [new IT500HR high resolution, long-life emitter SEM with large specimen chamber.](#)

See why our SEMs are SMART - FLEXIBLE - POWERFUL imaging and analysis tools. Let us demonstrate the latest SEMs in our lab or by remote connection.

Our [JEM-1400Flash](#) is the latest generation of this extremely popular Transmission Electron Microscope. We greatly appreciate all the generous compliments we have received from our JEM-1400 TEM users.

For an overview of our new lineup of microscopy products [click here.](#)

Highlights of Upcoming Events

See our full calendar of events [here.](#)

Symposium: Renishaw Raman Technology & Techniques

September 19, 2017 | Dundee, IL

[Information and registration](#)

[MAFS/SAFS/ASTEE Combined Meeting](#) | Booth #22 | Sep 20-22, 2017 | Cincinnati, OH

[Ultrastructural Pathology 101](#) | Sep 24-27, 2017 | Estes Park, Colorado

[Materials Science & Technology](#) | Booth 209/308 Oct 8-12, 2017 | Pittsburgh, PA

PAST EVENTS

IMRC MRS Cancun, Mexico

At a presentation during International Materials Research Congress IMRC 2017 in Cancun: Big data on atomic resolution microscopy presented by Steve Pennycook! <http://go.jeolusa.com/e/234012/2xzG24w/2t65s/66260085?h=K3iZcJouxJs2qgpjrWTml80cfZtu64yVmNGhLrvOwO0>

M&M 2017 St. Louis, Missouri



M&M 2017 - St. Louis arch, Dr. Jaap Brink demonstrating the JEM-1400Plus, Prof. Linn Hobbs (MIT) won our trivia contest, Gloria Stepney from Montefiore Medical Center visited her JEM-1400 TEM on loan to Gatan, Dave Edwards and Robb Mierzwa demonstrating the new IT500HR, visitors playing to win one of our contests, MSA thank you card, our popular fidget spinners were entertainment for all, including the MIT/Concord Middle School teacher and students, demonstration of the JSM-IT100, JEOL sales and applications members took time out to visit the arch, greeting visitors at our front des, MIT/Concord Middle School students get a SEM demo from Vern Robertson, we celebrated a milestone with MAS!

SEMINAR: Catch the Next Wave of Technology | Medtronic | Fridley, Minnesota

Thanks to our hosts at Medtronic - and the attendees who joined us for this seminar/workshop earlier this month.

Stay in touch with us at JEOL USA and share in the fun and some valuable information. Besides, we like to see you there!



Contact us at jeolink@jeol.com.

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Contact Us At:

JEOL USA, Inc. | 11 Dearborn Road | Peabody, MA 01960
 Phone: 978-536-5900 | salesinfo@jeol.com

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